AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application. Where claims have been amended and/or canceled, such amendments and/or cancellations are done without prejudice and/or waiver and/or disclaimer to the claimed and/or disclosed subject matter, and Applicant reserves the right to claim this subject matter and/or other disclosed subject matter in a continuing application.

 (currently amended) A method for controlling exchange coupling of grains of a magnetic medium, the method comprising:

providing a magnetic medium having magnetic grains; and

irradiating the magnetic medium with ions <u>having an acceleration voltage of</u>
<u>between 10 keV and 100 keV</u> to induce exchange coupling between grains of the magnetic
medium.

- (original) The method according to claim 1, wherein the ions are selected from the group consisting of H⁺, He⁺, Ne⁺, Ar⁺, Kr⁺, and Xe⁺.
- (original) The method according to claim 1, further comprising ionizing a gas to create the ions.
- 4. (original) The method according to claim 1, wherein the ions are selected from the group consisting of Ga^{+} , Hg^{+} , and In^{+} .
- (original) The method according to claim 1, further comprising generating the ions from a liquid metal ion source.
 - 6. (canceled)

- (currently amended) The method according to claim 16, wherein irradiating the
 magnetic medium irradiates the magnetic medium with ions having an acceleration voltage of
 between 20 keV and 30 keV.
- (original) The method according to claim 1, wherein irradiating the magnetic medium irradiates the magnetic medium with ions having an energy that substantially affects an entire thickness of the magnetic medium.
- (withdrawn) The method according to claim 1, wherein the magnetic medium includes granular magnetic particles on a tape.
- (withdrawn) The method according to claim 1, wherein the magnetic medium includes granular magnetic particles on a disk.
- (original) The method according to claim 1, wherein the magnetic medium has a perpendicular magnetization.
- (original) The method according to claim 1, wherein the magnetic medium has a longitudinal magnetization.
- (original) The method according to claim 1, wherein the magnetic medium has a magnetization between a perpendicular magnetization and a longitudinal magnetization.
- 14. (original) The method according to claim 1, wherein irradiating the magnetic medium includes exposing the magnetic medium to an ion dosage of between 10^{13} ions/cm² and 10^{17} ions/cm².
 - 15. (original) The method according to claim 1, wherein irradiating the magnetic

medium includes exposing the magnetic medium to ions using a non-patterned exposure of the magnetic medium.

- (original) The method according to claim 1, wherein the irradiating is performed to increase the areal density of magnetic bits that can be recorded on the medium.
- (withdrawn) A magnetic medium formed by irradiating the magnetic medium with ions to induce exchange coupling between grains of the magnetic medium.
- (withdrawn) The magnetic medium according to claim 17, wherein the ions are selected from the group consisting of H⁺, He⁺, Ne⁺, Ar⁺, Kr⁺, and Xe⁺.
- 19. (withdrawn) The magnetic medium according to claim 17, wherein the ions are selected from the group consisting of Ga^{+} , Hg^{+} , and In^{+} .
- (withdrawn) The magnetic medium according to claim 17, wherein the magnetic medium is irradiated with ions having an acceleration voltage of between 10 keV and 100 keV.
- 21. (withdrawn) The magnetic medium according to claim 17, wherein the magnetic medium has been exposed to an ion dosage of between 10¹³ ions/cm² and 10¹⁷ ions/cm².
- 22. (withdrawn) The method according to claim 17, wherein an areal density of magnetic bits that can be recorded on the medium is increased by the irradiation of ions.
 - (currently amended) A method, comprising: providing a magnetic medium having magnetic grains; and

- irradiating the magnetic medium with ions having an acceleration voltage of between 10 keV and 100 keV, in a non-patterned fashion, to increase an areal density of magnetic bits that can be recorded on the medium.
- 24. (original) The method according to claim 23, wherein the ions are selected from the group consisting of H^+ , Hc^+ , Nc^+ , Ar^+ , Kr^+ , and Xc^+ .
- 25. (original) The method according to claim 23, wherein the ions are selected from the group consisting of Ga^* , Hg^+ , and In^+ .

(canceled)

- (currently amended) The method according to claim <u>2326</u>, wherein irradiating the magnetic medium irradiates the magnetic medium with ions having an acceleration voltage of between 20 keV and 30 keV.
- 28. (original) The method according to claim 23, wherein irradiating the magnetic medium irradiates the magnetic medium with ions having an energy that substantially affects an entire thickness of the magnetic medium.
- 29. (original) The method according to claim 23, wherein irradiating the magnetic medium includes exposing the magnetic medium to an ion dosage of between 10¹³ ions/cm² and 10¹⁷ ions/cm²